

2016 Peking iGEM
The Questionnaire about the Cognition of Uranium Pollution,
Biological Material and Synthetic Biology

Hello! We are the team members of the 2016 Peking iGEM. The International Genetically Engineered Machine Competition (the full name for "iGEM") is the first-class international academic competition in synthetic biology, thus attracting hundreds of team entries every year.

We are doing a survey aiming at obtaining your cognition of uranium pollution, biological material and synthetic biology to provide scientific evidence for the future science education. Hope to get your active cooperation, thank you very much!

There is no right or wrong for each question. Choice of every question only presents your private opinion. Your real idea is really important for us. During the study, we will collect data disguisedly and the collected data will only be used as the scientific study materials. Please don't have any concerns. Thank you for your Collaboration & Support again!

The first part

(The cognition of uranium pollution and the remediation approaches)

The following question is about your cognition of uranium pollution and the remediation approaches. Please pay attention to different requirements and choose your best answer.

1. Do you think uranium is a heavy metal element which can greatly threaten human health?

- (1) Yes (2) No (3) Have no idea

2. In your opinion, what should be the upper acceptable concentration of uranium in water?

- (1) 0.01mg/L (2) 0.1mg/L (3) 1mg/L (4) 10mg/L

3. In your opinion, what kinds of materials contain uranium ?

[More than one answer could be chosen]

- (1) Coal (2) Marble (3) Banana (4) Sea water

4. In your opinion, what are the possible sources of uranium pollution?

[More than one answer could be chosen]

- (1) Abandoned mine
(2) Nuclear accident
(3) Depleted-uranium weapon
(4) Nuclear waste
(5) Nuclear test

5. In your opinion, how much will uranium affect our life?

- (1) Seriously affects our health

(2) Has little effect

(3) No effect if we don't touch it directly

(4) Depends on the concentration of uranium

6. In your opinion, what could be the harmful influence of uranium on our health?

[More than one answer could be chosen]

(1) One of the uranium decay intermediates is radon, a gas. If breathed into lungs even in trace amount, it will disturb the gene sequences of surrounding alveolar cells and induce cancer.

(2) Causing leukemia

(3) Causing nephropathy

(4) Affecting reproductive function

(5) Causing immune system diseases

7. In your opinion, what can we do to deal with the water badly polluted by uranium ?

[More than one answer could be chosen]

(1) Discharge the water into the sea to dilute uranium

(2) Evaporation-enrichment method

(3) Chemical precipitation method

(4) Adsorption method

(5) Ion exchange method

(6) Solidify it into cement and bury it deep

(7) Pipe water into the sewage treatment plants

(8) Pipe water into the nuclear fuel reprocessing plants

(9) Biosorption process

8. In your opinion, which method is the best to deal with uranium contamination of water?

(1) Discharge the water into the sea to dilute uranium

(2) Evaporation-enrichment method

(3) Chemical precipitation method

(4) Adsorption method

(5) Ion exchange method

(6) Solidify it into cement and bury it deep

(7) Pipe water into the sewage treatment plants

(8) Pipe water into the nuclear fuel reprocessing plants

(9) Biosorption process

The second part

(The cognition of biological materials)

The following question is about your cognition of biological materials. Please pay attention to different requirements and choose your best answer.

9. Have you ever heard of biological materials?

- (1) Yes (2) No (3) Have no idea

10. In your opinion, which of the following belongs to the characteristics of biological materials?

[More than one answer could be chosen]

- (1) Low weight
(2) High strength
(3) Fine structure
(4) Different performances
(5) Good biocompatibility

11. Do you think protein materials belong to biological functional materials?

- (1) Yes (2) No (3) Have no idea

12. Do you think protein materials can be used to deal with water pollution?

- (1) Yes (2) No (3) Have no idea

13. In your opinion, what are the prominent advantages of protein materials?

[More than one answer could be chosen]

- (1) High intelligence
(2) High biological activity
(3) Biodegradability
(4) Economic applicability

The third part

(The cognition of synthetic biology)

The following question is about your cognition of synthetic biology. Please pay attention to different requirements and choose your best answer.

14. Have you ever heard of synthetic biology?

- (1) Yes (2) No (3) Have no idea

15. Which of the following terms have you heard before?

[More than one answer could be chosen]

- (1) Transgenesis
(2) Clone

(3) Molecular detection

(4) Synthetic biology

(5) Gene therapy

(6) iGEM

16. Which channels did you hear of these terms through?

[More than one answer could be chosen]

(1) Newspaper

(2) Magazine

(3) Network

(4) Lecture

(5) Television

(6) Other

17. What do you think of synthetic biology?

(1) Absolutely good

(2) Absolutely bad

(3) Both good and bad

18. Some researchers suggest that we can use synthetic biology to deal with heavy metal pollution.

What's your opinion on this issue?

(1) Maybe it will work.

(2) It's impossible.

(3) Have no idea

19. Suppose that the researchers have come up with a method of synthetic biology to deal with heavy metal pollution. Would you like to adopt this method?

(1) Yes (Go to Q20)

(2) No (Go to Q21)

20. What's the main reason for your adopting this method ?

[More than one answer could be chosen]

(1) More economical

(2) Need less time

(3) More convenient

(4) More eco-friendly

(5) Other

21. What's the main reason for your not adopting this method ?

[More than one answer could be chosen]

(1) It may carry a risk.

(2) It may be expensive.

(3) The treatment effect may not be as good as the traditional ways.

(4) Other

The Fourth Part
(Demographic Part)

22. Your Age?

(1) Below 15

(2) 15 to 30

(3) 30-50

(4) 50-70

(5) above 70

23. Your Gender?

(1) Male

(2) Female

24. Your census register?

(1) Rural

(2) Urban

25. Your education level?

(1) Untutored

(2) Grade School

(3) Junior High School

(4) High School

(5) Undergraduate or above